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ARCTIC SURVIVAL AND SIR JOHN FRANKLIN: or
Three Incredible Things for Breakfast

Submitted
To

The Arctic Circular

By
Timothy C. Losey
Department of Anthropology
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As part of the 1970 Northwest Territories Centennial Year celebration, the University of Alberta Boreal Institute conceived and sponsored an archaeological expedition to Sir John Franklin's Fort Enterprise. The major purpose was to locate and excavate as far as possible the remains of the Winter Lake outpost.

The field party consisted of six members including one Territorial Government Advisor. Represented in this group were specialists from the natural sciences and humanities. Specialties ranging from archaeology and history to geology, palynology and soils science gave the project an interdisciplinary quality. A total of five weeks of July and August were spent on the site.

A primary effort during this period was directed toward partial excavation of the largest of three buildings which comprised the site. This was not only to confirm but to augment the historic record as contained in the written journal of Sir John Franklin (1969). Beyond this task, an effort to gain some intimate knowledge regarding the total area was made. It was hoped that some new data could thus be brought to bear on the circumstances which played an important part in the successes and failures met by Franklin's first overland expedition.

For the purposes of this paper it is not deemed necessary to engage in a detailed discussion of the archaeology. This will be reported elsewhere (Losey and Bond, in press). Suffice to say that, in the main, archaeological evidence confirmed major events referred to in the written record. Such things as dimensions and

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positions of buildings, location of rooms, fireplaces, etc. are all archaeologically recoverable data. Specific activities and happenings such as tearing up floor planks for fuel, excessive rain causing the mud covering to slide from the roof, and even melting of pewter cups for musket balls were confirmed in the archaeology. The total artifact inventory is small as might be expected. Fort Enterprise was not a trading post but winter quarters, and later, a haven for members of a scientific endeavor. The site was actually occupied for only nine months during 1820-21.

Environmental data ranging from climatic to physiographic have only begun to be analyzed. Several interesting points are already emerging which appear to have some bearing on effects which the environment had on the Franklin party and also, those the party had on the environment. The environment, in turn, seems to have reciprocated by causing certain "discomforts" suffered by the survivors of the Franklin expedition.

The statement that Franklin probably knew less about the North than did the Apollo Astronauts about the moon is a reasonably accurate one. The fact that little if anything was known about the Far North is easily documented (Nanton, 1970). This refers particularly to the severe limitations placed on the human species by the extremes of northern climate. The rugged, boulder strewn terrain resulting from repeated glaciation is another factor to be seriously considered by the traveller. Water travel from the earliest times has been a traditional method of transport (Morse, 1967). Only the indigenous Native population knew the subtleties of the North and could survive

#4

its rigours.

It is a fact that travel by land in the Canadian Barrens was not sufficiently developed until nearly thirty years following the first Franklin expedition of 1819-22 (Neatby, 1958:140). This resulted mainly from the long search for Franklin's third expedition (1845) and extended well into the 1860's. Many unnecessary hardships were endured by early explorers simply due to their lack of knowledge and the failure to recognize Native methods of subsistence and survival as worthy of attention. #4

At Winter Lake evidence of human occupation prior to Franklin's is abundant. The area is literally laced with caribou (Rangifer tarandus) trails which flow southward from the barren-lands. The pattern of caribou migration has a long history and evidence of prehistoric utilization of this pattern is concentrated along the major migration routes. Franklin, influenced by his Copper Indian guide Akaitcho, chose the site of Fort Enterprise partly for availability of building material. Akaitcho urged this decision for he knew the migration pattern (Franklin, 1969:204). If the Fort had been constructed away from the route of migrating herds of caribou, the party may well have perished in its first winter.

But a strange and unfortunate accident occured the very day the party landed at Winter Lake which may have upset this pattern. A signal fire was lit

> ...on the south side of Winter River to

> inform the chief (Akaitcho) of our arrival, which spreading before a strong wind, caught the whole wood, and we were completely enveloped in a cloud of smoke for the three days following. (ibid:222)

It is a well established fact that forest fires in the North are extremely devastating (Scotter, 1964). Regeneration in this delicate environment is very slow. Following a severe fire where the humus is completely destroyed, 100 years may be required before regeneration occurs and vegetation is restored. The winter range of the Barren-ground Caribou is directly affected by such burned over areas. Such areas are deliberately shunned by the animals until normal vegetation cover, particularly of lichens, is restored. (ibid).

Bearing this in mind, one can speculate on the effects caused by the runaway fire along the banks of Winter River. Certainly a three day burn would have destroyed a considerable tract of natural caribou range-land in this very strategic area. One wonders how important this was one year later when the survivors of the Franklin party returned to Fort Enterprise, starving, and unable to procure any meat save the occasional partridge. Franklin cites only one instance where caribou were sighted near the house; 30 October, 1821 (1969:447). By this time the animals should have been numerous as they began to migrate through the forest/tundra toward the winter range (Kelsall, 1968:132). During this same month one year prior, Franklin reports having stored for the winter 180 carcasses of "deer" (ibid.:245). Was the migration pattern upset by the careless signal fire set the year before? It is certainly an interesting possibility.

Other, perhaps not so devasting environmental effects, were also observed at Fort Enterprise. Coring of spruce trees (Picea glauca) and (P. mariana) in the vicinity gave rise to the fact that no trees within 100 to 150 yards of the site were in excess of 150 years old. Trees beyond this perimeter were found to be upwards of 175 years old. Although no detailed study was undertaken, evidence suggests that a time lapse of from 15 to 25 years may be involved between initial tree removal and subsequent regeneration. The effect is simply the result of tree utilization in the building of the three structures comprising the site.

Here again there seems to have been reciprocal environmental effects in regarding the Franklin party. Following the return overland to Fort Enterprise from the Arctic coast, (a circumstance forced by an early onset of winter), six survivors of an original 19 found themselves faced with two basic human requirements: food and warmth. The lack of fuel for the fireplaces forced the men to tear up the flooring for that purpose (ibid.:438). Archaeological evidence confirmed this. Later the storehouse was dismantled for the same reason (ibid.:464). By this time the effects of slow starvation were making themselves felt. No man was capable of navigating the required distance through deep snow to the standing timber. On the day of their rescue Franklin remarked that the Indians

> ...brought in a pile of dried wood, which
> was lying on the river-side, and on which
> we had often cast a wishful eye, being
> unable to drag it up the bank. (ibid.:468)

It is interesting to note that a small Dogrib Indian settlement less than forty miles downstream from Fort Enterprise was recently abandoned

under almost identical circumstances.

In connection with the quest for food Franklin recalls,

> We...were gratified to find several deer skins (caribou) which had been thrown away during our former residence. The bones were gathered from the heap of ashes, these with the skins, and the addition of the Tripe de Roche, we considered would support us tolerably well for a time. (ibid.:438).

The bulk of this refuse was deposited in a trench which paralleled the west wall of the kitchen. These bones and other debris were found along with repeated layers of wood-ash and calcined bone derived from fireplace sweepings.

Some further points of interest have come to light as a result of soils studies conducted at the site. The Winter Lake area lies within the permafrost zone of Northern Canada (Brown, 1970). Maximum thaw in this area occurs in late August at which time the permafrost lies ca. 30 inches below the surface. During the Spring and early Summer the ground is sodden to the point of saturation owing to the rapid spring thaw. Freezing and thawing occurs repeatedly throughout this time. There is no reasons to assume that similar conditions did not prevail during the Spring and Summer of 1821 following the departure of the Franklin party down the Coppermine River to the Arctic Sea.

A soup which provided subsistence for 27 days (11 October to 17 November, 1821) was, as mentioned, derived largely from the

refuse pile. It was reported that, "The bones were quite acrid, and the soup extracted from them excoriated the mouth..." (Franklin, 1825:440). Some of the men could not keep this liquid in their stomachs while others refused it altogether. Two of the Canadians, (Samandre' and Peltier) both died on the night of November 1st. Although their deaths cannot be attributed to much more than their generally poor physical condition, it is suggested that the ingestion of the bone-soup did nothing to improve it. It is further suggested that the soup may, in fact, have contained a substantial quantity of lye!

One very old and common method of procuring lye for the manufacture of soap involves saturating a quantity of wood ashes with water and draining this mixture through a cheezecloth. This renders free two soluble alkali compounds, potassium hydroxide and sodium hydroxide. It is essentially the same process which would have occurred in the refuse heaps as the earth became saturated with spring meltwater. The alkali would have been in solution for a time and later precipitated in greater concentration at depth, perhaps at the base of the refuse heap. Bones subsequently gathered from this deposit and boiled would again release the lye in solution, this time in the soup broth; a bizarre but nevertheless quite substantial reason for the continued ill health suffered by these men.

The above discussion may seem to some rather speculative.

Some of the inferences are substantial while others may be disregarded in the final analysis. However, the trend in contemporary archaeology is toward a greater understanding of man and human behavior in the context of his environment. It has been a particularly fruitful approach to problems in prehistory. The writer suggests it is applicable to historical and modern problems as well.

Looking ahead, much is yet to be done before a final analysis and interpretation can be forwarded concerning these and other data. Climatic information gathered during August, 1970 is being compared with that recorded for the same month in 1820. This comparison may be instructive in interpreting pollen assemblages recovered both from the modern surface and from beneath the buildings at Fort Enterprise. In connection with this, soils analyses are in process to determine the exact nature and development of the forest/tundra transition. An inventory of the local flora is also being compared to the assemblage recorded by Franklin. Artifacts, bones and structural features recovered from the site are in the final stage of analysis and a full report will soon be forthcoming.

If this discussion of relationships between man, i.e. Franklin, and his environment is of no other value, it is at least timely. It is perhaps instructive to observe effects and counter-effects which can occur through abuse or mis-management of environmental resources. Today, in North America, man has infinitely more destructive potential than he did 150 years ago. The Canadian North (Sir John Franklin's North) is presently undergoing rapid development. Canadians should take a long, hard look at this development to be

certain that it does not cause serious, irreversible damage to one of the world's last and largest natural wilderness resources--Canada's Northwest Territories.

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